IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1-12 and ADD new claims 17-21 in accordance ~~with the following:~~

1. (CURRENTLY AMENDED) A method comprising ~~the steps of~~:

generating WDM signal light by wavelength division multiplexing a plurality of optical signals having different wavelengths;

transmitting said WDM signal light by an optical fiber transmission line; and

receiving said WDM signal light transmitted by said optical fiber transmission line;

said receiving ~~step~~ comprising ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals; and

providing a variable dispersion compensator whose chromatic dispersion and dispersion slope are controlled so that said detected chromatic dispersion is reduced.

2. (CURRENTLY AMENDED) A method according to claim 1, wherein said detecting ~~step~~ comprises ~~the steps of~~:

converting at least one of said plurality of optical signals into an electrical signal; and

detecting the power of a frequency component in said electrical signal corresponding to the bit rate of said at least one optical signal.

3. (CURRENTLY AMENDED) A method according to claim 1, wherein said transmitting ~~step~~ comprises ~~the step of~~ providing a linear repeating unit.

4. (CURRENTLY AMENDED) A method according to claim 3, wherein said transmitting ~~step~~ further comprises ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals in said linear repeating unit; and

providing a variable dispersion compensator whose chromatic dispersion and dispersion slope are controlled so that said detected chromatic dispersion in said linear repeating unit is

reduced.

5. (CURRENTLY AMENDED) A method according to claim 3, wherein said transmitting ~~step~~ further comprises ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals in said linear repeating unit;

providing a variable dispersion compensator whose chromatic dispersion is controlled so that said detected chromatic dispersion in said linear repeating unit is reduced; and

providing a dispersion slope compensator for compensating dispersion slope in said linear repeating unit.

6. (CURRENTLY AMENDED) A method according to claim 1, wherein said generating ~~step~~ comprises ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals;

providing a variable dispersion compensator whose chromatic dispersion is controlled so that said detected chromatic dispersion is reduced; and

providing a dispersion slope compensator for compensating dispersion slope.

7. (CURRENTLY AMENDED) A method comprising ~~the steps of~~:

generating WDM signal light by wavelength division multiplexing a plurality of optical signals having different wavelengths;

transmitting said WDM signal light by an optical fiber transmission line; and

receiving said WDM signal light transmitted by said optical fiber transmission line;

said receiving step comprising the steps of detecting chromatic dispersion related to at least one of said plurality of optical signals;

providing a variable dispersion compensator whose chromatic dispersion is controlled so that said detected chromatic dispersion is reduced; and

providing a dispersion slope compensator for compensating dispersion slope.

8. (CURRENTLY AMENDED) A method according to claim 7, wherein said detecting ~~step~~ comprises ~~the steps of~~:

converting at least one of said plurality of optical signals into an electrical signal; and

detecting the power of a frequency component in said electrical signal corresponding to the bit rate of said at least one optical signal.

9. (CURRENTLY AMENDED)A method according to claim 7, wherein said transmitting ~~step~~ comprises ~~the step of~~ providing a linear repeating unit.

10. (CURRENTLY AMENDED) A method according to claim 9, wherein said transmitting ~~step~~ further comprises ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals in said linear repeating unit; and

providing a variable dispersion compensator whose chromatic dispersion and dispersion slope are controlled so that said detected chromatic dispersion in said linear repeating unit is reduced.

11. (CURRENTLY AMENDED) A method according to claim 9, wherein said transmitting ~~step~~ further comprises ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals in said linear repeating unit;

providing a variable dispersion compensator whose chromatic dispersion is controlled so that said detected chromatic dispersion in said linear repeating unit is reduced; and

providing a dispersion slope compensator for compensating dispersion slope in said linear repeating unit.

12. (CURRENTLY AMENDED) A method according to claim 7, wherein said generating ~~step~~ comprises ~~the steps of~~:

detecting chromatic dispersion related to at least one of said plurality of optical signals;

providing a variable dispersion compensator whose chromatic dispersion is controlled so that said detected chromatic dispersion is reduced; and

providing a dispersion slope compensator for compensating dispersion slope.

13. (ORIGINAL) A system comprising:

a transmitting terminal unit for generating WDM signal light by wavelength division multiplexing a plurality of optical signals having different wavelengths;

an optical fiber transmission line for transmitting said WDM signal light; and

a receiving terminal unit for receiving said WDM signal light transmitted by said optical fiber transmission line;

said receiving terminal unit comprising:

a dispersion monitor for detecting chromatic dispersion related to at least one of said plurality of optical signals;

a variable dispersion compensator; and

a circuit for controlling the chromatic dispersion and dispersion slope in said variable dispersion compensator so that said detected chromatic dispersion is reduced.

14. (ORIGINAL) A system according to claim 13, wherein said dispersion monitor comprises a converter for converting at least one of said plurality of optical signals into an electrical signal, a bandpass filter for extracting a frequency component in said electrical signal corresponding to the bit rate of said at least one optical signal, and a power sensor for detecting the power of said frequency component.

15. (ORIGINAL) A system comprising:

a transmitting terminal unit for generating WDM signal light by wavelength division multiplexing a plurality of optical signals having different wavelengths;

an optical fiber transmission line for transmitting said WDM signal light; and

a receiving terminal unit for receiving said WDM signal light transmitted by said optical fiber transmission line;

said receiving terminal unit comprising:

a dispersion monitor for detecting chromatic dispersion related to at least one of said plurality of optical signals;

a variable dispersion compensator;

a circuit for controlling the chromatic dispersion in said variable dispersion compensator so that said detected chromatic dispersion is reduced; and

a dispersion slope compensator for compensating dispersion slope.

16. (ORIGINAL) A system according to claim 15, wherein said dispersion monitor comprises a converter for converting at least one of said plurality of optical signals into an electrical signal, a bandpass filter for extracting a frequency component in said electrical signal corresponding to the bit rate of said at least one optical signal, and a power sensor for detecting the power of said frequency component.

17. (NEW) A method according to claim 1, wherein said detecting comprises detecting

chromatic dispersion related to at least two channels, and detecting dispersion slope based on said detected chromatic dispersion;

said providing comprises controlling said chromatic dispersion and said dispersion slope of said variable dispersion compensator based on said detected chromatic dispersion and said detected dispersion slope so that said detected chromatic dispersion is optimized.

18. (NEW) A system according to claim 13, wherein said receiving terminal unit comprises a dispersion monitor for detecting chromatic dispersion related to at least two of said plurality of optical signals;

said circuit detects dispersion slope based on said detected chromatic dispersion and controls said chromatic dispersion, and said dispersion slope of said variable dispersion compensator based on said detected chromatic dispersion, and said detected dispersion slope so that said detected chromatic dispersion is optimized

19. (NEW) A system according to claim 13, wherein said receiving terminal unit comprises an interleaver for dividing said WDM signal into first group of optical signals and second group of optical signals,

said variable dispersion compensators is provided for said first ground and second group; and

said circuit controls said variable dispersion compensators provided for first group and second group.

20. (NEW) A system according to claim 13, wherein said transmitting terminal unit comprises an interleaver for dividing said a plurality of optical signals into first group of optical signals and second group of optical signals; first variable dispersion compensator for compensating chromatic dispersion for optical signals of said first group ; and second variable dispersion compensator for compensating chromatic dispersion for optical signals of said second group.

21. (NEW) A system according to claim 15, wherein said receiving terminal unit comprises a polarization mode dispersion compensator provided for said each optical signal.